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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/658,236

09/08/2003

Gang Yu

UC0013 US NA

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08/30/2006

E I DU PONT DE NEMOURS AND COMPANY
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WILMINGTON, DE 19805

EXAMINER

RIELLEY, ELIZABETH A

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/658,236

Applicant(s)

YU ET AL.

Examiner

Elizabeth A. Rielley

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 14 August 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☒ The Notice of Appeal was filed on 14 August 2006. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: _____.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: please see note to number 3.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.

Continuation of 3. NOTE: The proposed amendment to claims 3 and 9 change the scope of the claims, thereby raising new issues that would require further consideration and search. Please see attached sheet for additional information. .

DETAILED ACTION***Response to Arguments***

Applicant's arguments filed 8/14/06 have been fully considered but they are not persuasive.

In regard to the 35 U.S.C. 112 second paragraph rejection, the Applicant argues that the proposed amendment to the description of the total phase change as $\Delta\phi(\lambda/2\pi)$ is a standard relationship that is well known to any of ordinary skill in the art; therefore, the proposed amendment to the claims and specification is not adding new matter but adding matter that is inherently disclosed in the original specification, since one of ordinary skill in the art would recognize that the term "total phase change" to mean $\Delta\phi(\lambda/2\pi)$.

The Examiner respectfully disagrees. The Examiner notes that even though the property of a phase transition is inherent to optical light, the "phase transition" itself has inherent properties that can be used or not used as one of ordinary skill in the art chooses to express this "phase transition". For examiner, even though it is known that a phase change may be expressed as $\Delta\phi(\lambda/2\pi)$, this expression is not the only way to express a phase change. In the cited Handbook of Optics on page 2.7, Bass et al state, "the phase difference is related to the difference in the optical path lengths between the sources and the observation point for the two waves". The phase difference as described by the Handbook of Optics defines the "phase difference" as a phase angle, or the physical degree to which one wave leads or lags another wave. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the term "phase difference" may also indicate the time interval between the two waves¹, which Bass et al do not describe. Therefore, even though Applicant's expression of a phase change is known in the art, it is not an exhaustive representation of the inherent properties of a phase

¹ http://www.its.bldrdoc.gov/fs-1037/dir-027/_3958.htm

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change, and one skilled in the art would not necessarily use the proposed expression to of $\Delta\phi(\lambda/2\pi)$ to indicate a phase change. Hence, Applicant's proposed amendments to the claim add a new matter by narrowing down the understanding of "phases change" into the claim.

In regard to Applicant's argument that Shen fails to teach an OLED comprising at least one layer selected from the first electrode, the second electrode, a hole transport layer, and electron -transport layer, and the organic active layer is configured to achieve low background emission, the Examiner respectfully disagrees. Applicant specifically states on page 3 lines 12-15, "If interfacial reflectivity between two adjacent layer within the organic electronic device is being configured to achieve low $L_{background}$, the interfacial reflectivity may be no greater than about 30 percent, wherein the interfacial reflectivity is determined by; (Equation 3)". Shen teaches an organic electroluminescent device (200) wherein the EL layer index of refraction is 1.72 and the ETL is 1.72. Therefore, the EL layer has been configured, that is made from a specific index of refraction in combination with adjoining layers, to achieve a low $L_{background}$ by making it's interfacial reflectivity between the EL layer and the ETL no greater than 30 percent, calculated by equation 3. Claim 1 of Applicant's specification does not claim how the layers are developed in order to achieve $L_{background}$. Hence, the Examiner referred to Applicant's specification page 3. Equations 1 and 2 are defined in claims 3 and 9 to be used to determine the thickness of one layer of the OLED. Equation 5 isn't recited in any claims. Hence, the Examiner referred to Applicant's specification page 3 that defines a way to achieve low $L_{background}$. Therefore, the prior art of record teaches all the limitations in the given claims.

In regard to Applicant's argument that the prior art of record fails to teach at least one of the layers has a thickness in a range of d_1 to d_2 , since Shen uses the optical properties of the layers to design the device and tune emissive light at specific emissions, the Examiner respectfully disagrees. Shen has

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designed an OLED with specific index of refraction for each layers. These layers then have a low background as taught by equation 3. In response to applicant's argument that The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

In regard to Applicant's argument that Yap teaches away from claims 11-13 in the teaching that the electrodes are made from materials other than a transition metal or an elemental metal or an oxide thereof, the Examiner respectfully disagrees. Yap discloses a low-reflectance layer 48 that is used as a conductor (which are electrodes) on column 6 lines 15-18 and on column 4 lines 22-34, Yap teaches these low-reflectance layers made from silicon and silicon oxide in order to lower unwanted light reflectance of the device Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to incorporate the low-reflectance electrodes as taught by Yap with the OLED as taught by Shen. Motivation to combine would be to lower unwanted light reflectance in the device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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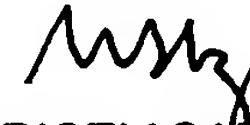
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Elizabeth Rielley

Examiner

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**MARICELI SANTIAGO
PRIMARY EXAMINER**